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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/423,534	12/14/1999	MATTHIAS LAU	1-14746	6863
7590	08/06/2004		EXAMINER	
MARSHALL & MELHORN PHILLIP S OBERLIN FOUR SEAGATE 8TH FLOOR TOLEDO, OH 43604			LUU, THANH X	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/423,534	LAU, MATTHIAS	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thanh X Luu	2878	

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 09 June 2004.

2a) This action is FINAL.                  2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 23-66 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 23-34,38,41-56,60 and 63-66 is/are rejected.

7) Claim(s) 35-37,39,40,57-59,61 and 62 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 09 June 2004 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_ .
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) <input type="checkbox"/> Other: _____ .

## **DETAILED ACTION**

This Office Action is in response to amendments and remarks filed June 9, 2004.

Claims 23-66 are currently pending.

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first and second optical conductors arranged in row arrangements and opposite one another in pairs must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 23-66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 23, it is unclear in its given context what “local assignment” means. It is also unclear what scope the term “accurate” encompasses.

Regarding claim 27, it is unclear in its given context what it means for optical conductors to be pointing “independent to each other” towards the at least one layer. As understood, since the optical conductors are arranged in the shape of a ring, the directions in which the conductors point are dependent. Furthermore, it is unclear how the ring shape in claim 27 is interrelated to the ring already claimed in claim 23.

Regarding claim 28, it is unclear how an inner ring is related to the rings claimed in claims 23 and 27.

Regarding claim 45, it is unclear in its given context what “local assignment” means. It is also unclear what scope the term “accurate” encompasses. In addition, it is unclear in its given context what “opposite each other in pairs” means. How are the conductors arranged “opposite” each other? Also, it is unclear how the first optical conductor and the second optical conductors are arranged in row arrangements and in pairs when the figures of the present invention only show one first optical conductor.

Regarding claim 49, it is unclear in its given context what it means for optical conductors to be pointing “independent to each other” towards the at least one layer. Furthermore, it is unclear how the ring shape in claim 49 is interrelated to the rows already claimed in claim 45.

Regarding claim 50, it is unclear how an inner ring is related to rows claimed in claim 45. Also, it is unclear how the first and second conductors are arranged in row arrangements and also in the form of a ring with an alternating arrangement.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 23-28, 31-34, 43, 45-50, 53-57 and 65, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Trost (U.S. Patent 6,066,245) in view of Seitz et al. (U.S. Patent 4,548,907).

Regarding claims 23, 25-28, 31-34, 43, 45, 47-50, 53-57 and 65, Trost discloses (see Figs. 2 and 3) a device for measuring fluorescence excited by light comprising: a support (210); at least one layer (212) applied to the support, the at least one layer of material having a planar fluorescing layer containing a fluorescing material; at least one light source (216) which emits light of at least one wavelength which excites at least one fluorescence, and thus, fluorescent light, in the at least one layer; at least one first optical conductor (224 or 304) which directs light from the at least one light source in the direction of the at least one planar layer of material; at least one detector (270) for measuring the intensity of the fluorescent light; at least one second optical conductor (226 or 302) receiving the fluorescent light generated in the at least one layer, the at least one second optical conductor directing the fluorescent light onto the at least one detector; wherein the end faces of at least one first optical conductor and the at least one second optical conductor are arranged relative to one another as a function of their numerical apertures (see col. 4, line 52-col. 5, line 38) and as a function of the at least

one planar layer of material, and (see Figs. 3 and 4) wherein the at least one first optical conductor and the at least one second optical conductor are arranged as a bundle in the shape of a ring with the at least one first optical conductor arranged in the interior of the ring. Trost also disclose a filter (220) between the light source and the at least one first optical conductor. In addition, Trost disclose (see Fig. 4) at least one of the second optical conductors is arranged in an inner ring or the conductors forming row arrangements. Further, as understood, since the device of Trost has the same structure, it provides accurate local assignment. Trost does not specifically disclose a measuring head as claimed. Seitz et al. teach (see Fig. 1) in a similar device having a measuring head (not labeled) holding at least one first optical conductor, the at least one second optical conductor and the at least one light source. Seitz et al. further disclose (see Fig. 1) the measuring head has an upper portion that is partially bent. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a measuring head in the apparatus of Trost in view of Seitz et al. to house and fix the configuration of the device.

Regarding claims 24 and 46, Trost and Seitz et al. disclose the claimed invention as set forth above. Trost and Seitz et al. do not specifically disclose the measuring head is of flexible construction. However, flexible housings for optical fibers are well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the measuring head with a flexible portion in the apparatus of Trost in view of Seitz et al. to more easily configure or move the device without damaging it.

7. Claims 29 and 51, as understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Trost in view of Seitz et al. and further in view of Pederson et al. (U.S. Patent 5,319,975).

Regarding claims 29 and 51, Trost and Seitz et al. disclose the invention as set forth above. Trost and Seitz et al. do not specifically disclose the optical conductors are inclined at different angles with the end faces pointing toward the fluorescing layer. Pederson et al. teach (see Figure 1) inclining optical conductors wherein the end faces point towards a fluorescing layer (8). Thus, Pederson et al. recognize an alternative arrangement for such a device. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to arrange the apparatus of Trost and Seitz et al. in view of Pederson et al. as claimed to direct illumination or collection and provide improved detection.

8. Claims 41 and 63, as understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Trost in view of Seitz et al., and further in view of Hesse (DD 106 086).

Regarding claims 41 and 63, Trost and Seitz et al. disclose the invention as set forth above. Trost and Seitz et al. do not specifically disclose a second detector for detecting a reference signal. Hesse teaches (see Figures) monitoring a reference signal though a second detector. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a second detector to detect a reference signal the apparatus of Trost and Seitz et al. in view of Hesse to aid in monitoring the correct operation of the device and improve detection.

9. Claims 30, 38, 42, 44, 52, 60, 64 and 66, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Trost in view of Seitz et al. as applied to claim 23 above, and further in view of Wagner (U.S. Patent 5,001,054) and Bessman et al. (U.S. Patent 4,431,004).

Regarding claims 30, 38, 44, 52, 60 and 66, Trost and Seitz et al. disclose the claimed invention as set forth above. Trost and Seitz et al. do not disclose a heater or a temperature sensor as claimed. Wagner teaches (see Figure 2) using a device having conductors and a fluorescing layer for monitoring glucose. Bessman et al. further teach (see column 2, lines 37-45) that glucose sensors are temperature dependent and (see Figure 4) disposing a temperature sensor proximate a glucose sensor. Thus, Wagner recognizes that the device of Trost and Seitz et al. detects glucose and Bessman et al. recognize the sensitivity of glucose sensors to temperature. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a heater and/or a temperature sensor on the support of Trost and Seitz et al. in view of Wagner and Bessman et al. to obtain more accurate detection.

Regarding claims 42 and 64, Trost and Seitz et al. disclose the claimed invention as set forth above. Trost and Seitz et al. do not disclose insulating the light source and detector. However, as stated above, Bessman et al. teach that monitoring glucose is dependent on temperature. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to insulate the light source and detector in the apparatus of Trost and Seitz et al. in view of Wagner and Bessman et al. to reduce the affect of the heat from the light source and detector from affecting the detection, and

thereby improve detection.

***Allowable Subject Matter***

10. Claims 35-37, 39, 40, 57-59, 61 and 62 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

11. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X Luu whose telephone number is (571) 272-2441. The examiner can normally be reached on M-F (6:30-4:00) First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thanh X Luu  
Primary Examiner  
Art Unit 2878

08/2004